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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

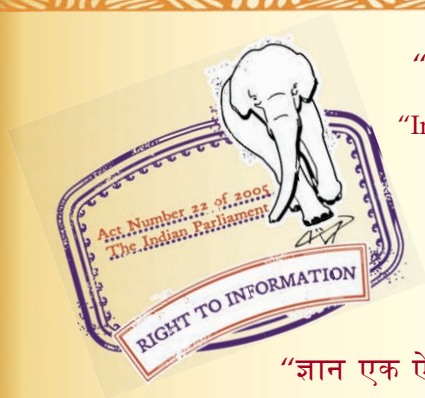
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

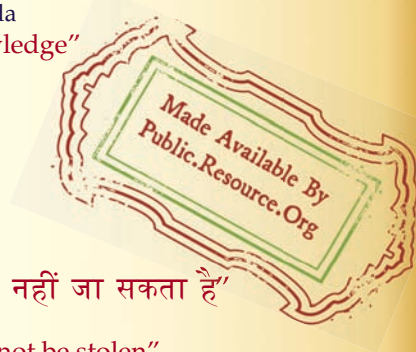
IS 1281 (1996): Bicycle Cranks and Chain Wheels [TED 16: Bicycles]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
साइकिल क्रैंक और चेन व्हील — विशिष्टि
(दूसरा पुनरीक्षण)

Indian Standard
BICYCLE CRANKS AND CHAIN WHEELS —
SPECIFICATION
(*Second Revision*)

ICS 43.140

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Bicycle Sectional Committee had been approved by the Transport Engineering Divisional Council.

This standard was originally published in 1958 and revised in 1968. As a result of experience gained in the manufacturing of bicycle cranks and chain wheels, all dimensions and quantities were given in the metric system in the first revision.

In this revision all amendments relating to test, etc, have been included. In addition more details of material and finish have also been specified.

While preparing this standard, assistance has been derived from the following:

G/Misc/199 Indigenous bicycle, Directorate General of Supplies and Disposals, Government of India.

Data Sheet No. 19C (Sheet No. 2) Motor cycle and bicycle roller chains and chain wheels. British cycle and Motor Cycle Manufacturers and Traders Union Limited.

Data Sheet No. 33a (Sheets No. 2 and 7) bottom bracket and cranks assembly. British Cycle and Motor Cycle Manufacturers and Traders Union Limited.

The Committee Composition responsible for the preparation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be that of the specified value in this standard.

Indian Standard

BICYCLE CRANKS AND CHAIN WHEELS — SPECIFICATION (*Second Revision*)

1 SCOPE

This standard covers the requirements for cranks and chain wheels intended for the chain drive and fitted on the centre axle of bicycle of two standard sizes (22 and 24) of bicycles in use in the country.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this Standard:

<i>IS No.</i>	<i>Title</i>
1068 : 1985	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium on iron and steel (<i>second revision</i>)
1283 : 1968	Bicycle freewheels and chains (<i>first revision</i>)
2062 : 1992	Steel for general structural purposes (<i>fourth revision</i>)
2403 : 1975	Transmission steel roller chains and chain wheels (<i>first revision</i>)
2500 (Part 1) : 1992	Sampling inspection procedures: Part 1 Attribute sampling plans indexed by acceptable quality level (AQL) for lot by lot inspection (<i>second revision</i>)
3203 : 1982	Methods for testing local thickness of electroplated coatings (<i>first revision</i>)
8500 : 1991	Structural steel — Microalloyed (medium and high strength qualities) (<i>first revision</i>)

3 MATERIAL

3.1 The cranks shall be made from any suitable steel meeting the requirements laid down in 8. Steel designation Fe 540 conforming to IS 8500 : 1991 may be used.

3.2 Chain Wheels

The chain wheels shall be made of steel conforming to IS 2062:1992.

NOTE — In addition to minimum properties specified, the steels used for the manufacture of cranks and chain wheels shall have other metallurgical properties, which would make them suitable for fabrication of the particular component as agreed between the purchaser and the supplier.

4 DIMENSIONS

4.1 The main dimensions of cranks, chain wheels and crank chain wheel assembly shall be as indicated in Fig. 1, 2 and 3 respectively (*see also* IS 2403 : 1975)

5 WORKMANSHIP

5.1 Cranks shall not show any forging defects, such as cracks, pits, scales, burrs, etc. The hole shall be square to the centre line of cranks and shall have a minimum of 6.5 mm material all round. The cranks shall be finished smooth. All sharp edges shall be rounded off.

5.2 Chain wheels shall be true and in one plane. The teeth shall be accurate and true and shall suit the bicycle chain (*see* IS 2403 : 1975). They shall be free from burrs, cracks and other defects and concentric with the hole on the crank for centre axle.

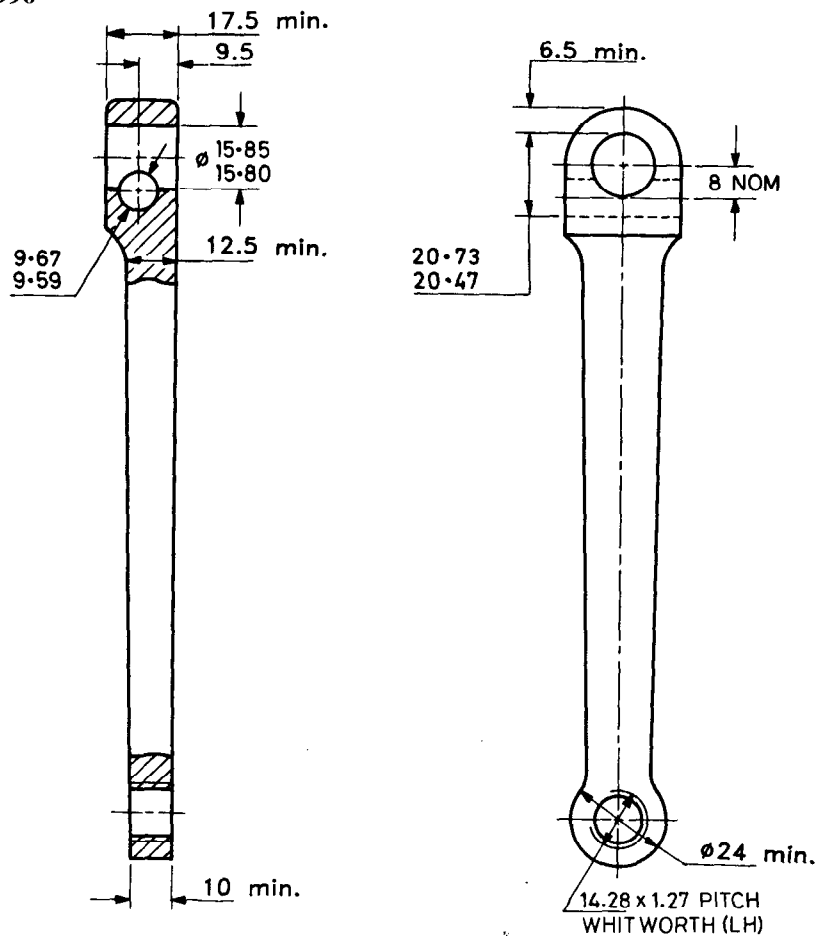
6 FINISH

6.1 Cranks and chain wheels shall be nickel and chromium plated. The minimum coating thickness shall be 10 micron of which the minimum chromium thickness shall be 0.3 micron. The method described in IS 1068 : 1985 and or IS 3203 : 1982 may be used to measure the coating thickness of the individual layer.

6.2 The plated surface shall be free from visible plating defects, such as pits, blisters, cloudy patches, unplated spot, cracks or stains. The plating shall adhere firmly to the base metal and shall be nonporous.

7 SAMPLING

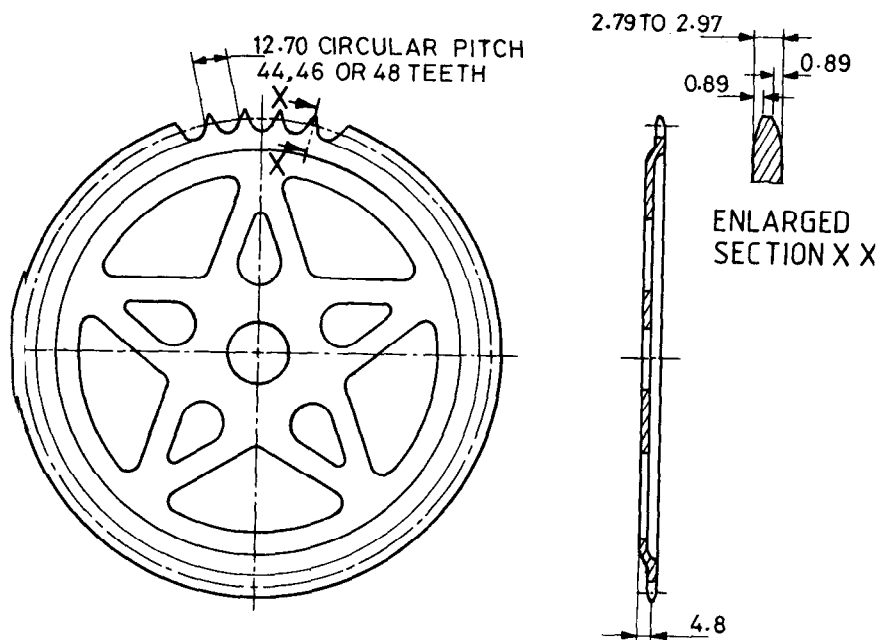
7.1 Unless otherwise agreed to between the supplier and the purchaser the procedure as given in IS 2500 (Part 1):1992 shall be followed for sampling inspection. The inspection level and the sampling plan for various characteristics as given in 7.1.1 to 7.1.4 shall be followed.



NOTE — The illustration is diagrammatic only and is not intended to illustrate details of design.

All dimensions in millimeters.

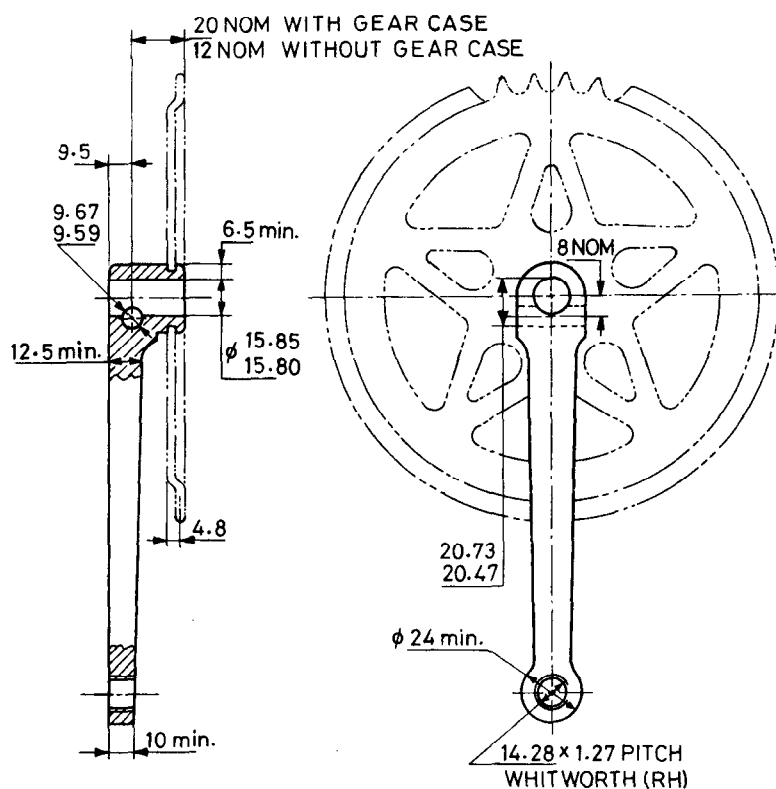
FIG. 1 DIMENSIONS FOR LEFT-HAND CRANK



NOTE — The illustration is diagrammatic only and is not intended to illustrate details of design.

All dimensions in millimeters.

FIG. 2 DIMENSIONS FOR CHAIN WHEEL



NOTE — The illustration is diagrammatic only and is not intended to illustrate details of design.

All dimensions in millimeters.

FIG. 3 RIGHT-HAND CRANK AND CHAIN WHEEL ASSEMBLY

7.1.1 For the characteristics, dimensions workmanship and finish, the scale of sampling shall be corresponding to inspection level 1 given in Table 1 of IS 2500 (Part 1): 1992.

7.1.2 For test, the scale of sampling shall be corresponding to inspection level S-3 given in Table 1 of IS 2500 (Part 1): 1992.

7.1.3 For the characteristics given in 7.1.1, the sampling plan to be followed shall be corresponding to Acceptable Quality Level (AQL) value of 1.5 percent given in Table 2-A of IS 2500 (Part 1): 1992.

7.1.4 For test, the sampling plan to be followed shall be corresponding to Acceptable Quality Level (AQL) of 1.0 percent given in Table 2 of IS 2500 (Part 1): 1992.

8 TEST

The assembly (*see* Fig. 3) shall be rigidly fixed in a vertical plan having the crank horizontal. Through suitable means, load shall be applied on the hole for the pedal spindle. The assembly shall sustain a load of 227 kgf minimum without showing any sign of yielding at the point. The crank bending shall not start till the load increases above 180 kgf.

9 MARKING

Chain wheels and cranks shall bear indicating the source the manufacturers, initials or registered trade mark and name of the country of origin.

10 PACKING

Crank and chain wheels shall be suitably wrapped and packed in accordance with best prevalent trade practice.

ANNEX A
(Foreword)
COMMITTEE COMPOSITION
Bicycles Sectional Committee, TED 16

Chairman
SHRI K. PADMANABHAN

Representing
TI Cycles of India, Madras

Members
SHRI M. SRINIVASAN (*Alternate to*
Shri K. Padmanabhan)
SHRI AJIT SINGH
SHRI DARSHAN SINGH (*Alternate*)
SHRI H. S. BAINS
SHRI J. S. RANDHAWA (*Alternate*)
SHRI HARINDER P. BHOGAL
SHRI NAGINDER SINGH BHOGAL (*Alternate*)
SHRI BRJMOHAN LALL
SHRI S. K. RAI (*Alternate*)
SHRI NAVRATTAN CHOPRA
SHRI P. P. DASGUPTA
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SHRI SUSHIL KUMAR
SHRI S. S. GUPTA (*Alternate*)
SHRI A. R. GULATI
Director (Transport Engineering)

Kular Cycle Industries, Ludhiana
Bicycle and Sewing Machine R&D Centre, Ludhiana
Bhogal Sons (Regd), Ludhiana
Hero Cycle Ltd, Ludhiana
Super Cycle International, Ludhiana
Dunlop India Ltd, Calcutta
Sadan Industries, Ludhiana
Director of Industries, Punjab, Chandigarh
Roadmaster Industries of India Ltd, Rajpura
Director of Industries Haryana, Chandigarh
Tata Iron and Steel Co Ltd, Jamshedpur
J. K. Cycles, Ludhiana
Atlas Cycles Industries Ltd, Sonapat
Directorate General of Supplies & Disposals, New Delhi.
Allied Exports (I), Ludhiana
Ralson India Ltd, Ludhiana
Ministry of Defence, DGQA (V), Ahmednagar
United Cycle and Parts Manufacturers, Association, Ludhiana
Avon Cycles Ltd, Ludhiana
Export Inspection Council of India, New Delhi
Navyug Bicycle Industries, Ludhiana
Sen and Pandit Pvt Ltd, Calcutta
Eastman Industries, Ludhiana
Hartex Rubber Ltd, Hyderabad
Department of Technical Development, Ministry of Industry, New Delhi
Director General, BIS (*Ex-Officio Member*)

Member Secretary
SHRI S. B. ROY
Joint Director (Transport Engineering), BIS

Bureau of Indian Standards

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Amendments Issued Since Publication

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